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(c) Each cylinder must be fabricated, tested, and marked in accordance with 46 CFR 147.60(b) and 49 CFR part 180.

(d) The cylinders in a common manifold must be:

- (1) Of the same size;
- (2) Filled with the same amount of agent; and
- (3) Pressurized to the same working pressure.

§ 95.16-30 Enclosure openings.

(a) If mechanical ventilation is provided for in a protected space, the ventilation system must automatically shut down prior to discharge of the system to that space.

(b) If natural ventilation is provided for in a space protected by a clean agent extinguishing system, the ventilation must be capable of being easily and effectively closed off.

(c) All other openings to a protected space must be capable of being closed. Doors, shutters, or dampers must be installed for openings in the lower portion of the space. Openings in the upper portion of the space must be capable of being closed off either by permanently installed means or by the use of canvas or other material normally carried on the vessel.

§ 95.16-35 Pressure relief.

Tight compartments, like refrigeration spaces and paint lockers, must have a way to relieve the accumulation of excessive pressure within the compartment when the extinguishing agent is injected.

§ 95.16-40 Locked spaces.

If a space or enclosure containing extinguishing agent supply or controls is lockable, a key to the space or enclosure must be in a break glass type box conspicuously located adjacent to the opening.

§ 95.16-45 Pre-discharge alarms and time delay devices.

(a) Each system protecting a space with greater than 6,000 cubic feet gross volume or a space less than 6,000 cubic feet gross volume without a suitable horizontal escape route must have a pneumatic pre-discharge alarm and time delay.

- (1) The time delay period must:

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- (i) Last at least 20 seconds;

(ii) Be approved by the Officer in Charge, Marine Inspection during system installation; and

(iii) Provide enough time for one person to walk from the farthest area of the protected space to the primary exit.

(2) The time delay device must be pneumatically operated and have an accuracy of $-0/+20$ percent of the rated time delay period throughout the operating temperature range and range of delay settings.

(b) The pre-discharge alarm must:

(1) Sound for the duration of the time delay;

(2) Be conspicuously and centrally located in the protected space and marked as required by 46 CFR 97.37-9;

(3) Depend on the extinguishing agent, gas from a pilot cylinder, or a nitrogen cylinder specifically provided to power the alarm for its source of power; and

(4) Be audible over running machinery.

§ 95.16-50 Instructions.

(a) Simple, complete operating instructions must be conspicuously located at or near any release station and in the extinguishing agent cylinder storage room.

(b) On a system in which extinguishing agent cylinders are stored outside the protected space, operating instructions must also:

(1) Include a schematic diagram of the system; and

(2) Describe alternate methods of discharging the extinguishing agent into protected spaces should the manual releases or stop valve controls fail to operate.

§ 95.16-60 System piping installation testing.

(a) *Halocarbon systems.* A pressure test using the extinguishing agent, air or inert gas, must be conducted on halocarbon system discharge piping on completion of piping installation and before extinguishing agent cylinders are connected.

(1) Except as otherwise specified in this section:

(i) Piping from the cylinders to the stop valves or selector valves must be

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subjected to a pressure of 1½ times the cylinder charging pressure at 70 °Fahrenheit; and

(ii) The leakage during a 2-minute period must not exceed a pressure drop of 10 percent of the test pressure.

(2) Individual branch lines to a protected space must be tested as described in paragraph (a)(1) of this section, except that:

(i) The pressure must be 150 pounds per square inch; and

(ii) Distribution piping must be capped within the protected space at the first joint upstream of the nozzles.

(3) Pneumatic actuation piping must be tested as described in paragraph (a)(1) of this section.

(b) *Inert gas systems.* A pressure test using air or inert gas must be conducted on each inert gas system's piping on completion of piping installation and before extinguishing agent cylinders are connected.

(1) Except as otherwise specified in this section:

(i) Piping from the cylinders to the stop valves or selector valves must be subjected to a pressure of 1,000 pounds per square inch (psi) at 70 °Fahrenheit; and

(ii) The leakage during a 2-minute period must not exceed a pressure drop of 100 psi.

(2) Individual branch lines to a protected space must be tested as described in paragraph (b)(1) of this section, except that:

(i) The pressure must be 600 psi; and

(ii) Distribution piping must be capped within the protected space at the first joint upstream of the nozzles.

(3) Pneumatic actuation piping must be tested as described in paragraph (b)(1) of this section.

(c) *Small independent systems.* In lieu of test requirements in paragraphs (a) or (b) of this section, a small independent halocarbon or inert gas system, like those found in emergency generator rooms and paint lockers, may be tested by blowing out the piping with air pressure of at least 100 psi, if:

(1) There are no valves in the system discharge piping; and

(2) There is not more than one change in direction between the agent container and the discharge nozzle.

§ 95.16-90 Installations contracted for prior to July 9, 2012.

Installations contracted for prior to July 9, 2012, must meet the requirements of this subpart unless previously approved existing arrangements, materials, and facilities are:

(a) Maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection; and

(b) Subjected to no more than minor repairs or alterations implemented to the same standards as the original installation.

Subpart 95.17—Foam Extinguishing Systems, Details

§ 95.17-1 Application.

(a) Where a foam extinguishing system is installed, the provisions of this subpart, with the exception of § 95.17-90, shall apply to all installations contracted for on or after November 19, 1952. Installations contracted for prior to November 19, 1952, shall meet the requirements of § 95.17-90.

§ 95.17-5 Quantity of foam required.

(a) *Area protected.* (1) For machinery and similar spaces, the system shall be so designed and arranged as to spread a blanket of foam over the entire tank top or bilge of the space protected. The arrangement of piping shall be such as to give a uniform distribution over the entire area protected.

(2) Where an installation is made to protect an oil fired boiler installation on a flat which is open to or can drain to the lower engine room or other space, both the flat and the lower space shall be protected simultaneously. The flat shall be fitted with suitable coamings on all openings other than deck drains to properly restrain the oil and foam at that level. Other installations of a similar nature will be considered in a like manner.

(3) Where a system is installed to protect a tank, it shall be so designed and arranged as to spread a blanket of foam over the entire liquid surface of the tank within the range of usual trim. The arrangement of piping shall be such as to give a uniform distribution over the entire area protected.